

Amendments to the Claims:

This listing of claims will replace all prior version, and listings of claims in the application.

Listing of Claims

1. (Previously Presented) For use in a system (100) capable of creating visual summaries of video material, an apparatus (130, 200) for creating a compact visual summary of video material, said apparatus (130, 200) comprising:

a visual summary controller (130, 200) capable of receiving keyframes of said video material;

wherein said visual summary controller (130, 200) is capable of extracting frame signatures from said keyframes, and capable of using said frame signatures to create superhistograms from said keyframes, and capable of using said frame signatures and said superhistograms to select representative keyframe images for each superhistogram to create a compact visual summary of said video material,

wherein said representative images include at least one of (1) the first image in each family histogram, (2) the most meaningful image in each superhistogram, (3) a randomly chosen image, and (4) an image that is closest to the cluster center.

2. (Original) The apparatus (130, 200) as claimed in Claim 1 wherein said visual summary controller (130, 200) is capable of filtering said keyframes and extracting frame signatures from said filtered keyframes before using said frame signatures to create said superhistograms to create a compact visual summary of said video material.

3. (Original) The apparatus (130, 200) as claimed in Claim 2 wherein said visual summary controller (130, 200) is capable of creating said compact visual summary of said video material by using said superhistograms to cluster said filtered keyframes, and by adding a representative keyframe from said clustered keyframes to said compact visual summary of said video material.

4. (Original) The apparatus (130, 200) as claimed in Claim 2 wherein said frame signature is a histogram.

5. (Original) The apparatus (130, 200) as claimed in Claim 3 wherein the distance measure for clustering is equal to a histogram difference calculated by one of: L1 distance measure method, L2 distance measure method, histogram intersection method, Chi Square test method, and bin-wise histogram intersection method.

6. (Previously Cancelled)

7. (Original) The apparatus (130, 200) as claimed in Claim 5 wherein said visual summary controller (130, 200) is capable of selecting a family histogram to use to create said compact visual summary of said video material.

8. (Original) The apparatus (130, 200) as claimed in Claim 1 wherein said visual summary controller (130, 200) further comprises:

a visual summary retrieval module (180) capable of retrieving a compact visual summary stored in a memory unit (120) and causing said compact visual summary to be displayed in response to a user request.

9. (Original) The apparatus (130, 200) as claimed in Claim 3 wherein said visual summary controller (130, 200) is capable of using said compact visual summary to access at least one portion of said video material.

10. (Original) The apparatus (130, 200) as claimed in Claim 3 wherein said visual summary controller (130, 200) is capable of using said compact visual summary to create new video material.

11. (Previously Presented) A system (100) capable of creating visual summaries of video material, said system (100) comprising an apparatus (130, 200) for creating a compact visual summary of video material, said apparatus (130, 200) comprising:

a visual summary controller (130, 200) capable of receiving keyframes of said video material;

wherein said visual summary controller (130, 200) is capable of extracting frame signatures from said keyframes, and capable of using said frame signatures to create superhistograms from said keyframes, and capable of using said frame signatures and said

superhistograms to select representative keyframe images for each superhistogram to create a compact visual summary of said video material ,

wherein said representative images include at least one of (1) the first image in each family histogram, (2) the most meaningful image in each superhistogram, (3) a randomly chosen image, and (4) an image that is closest to the cluster center.

12. (Original) The system (100) as claimed in Claim 11 wherein said visual summary controller (130, 200) is capable of filtering said keyframes and extracting frame signatures from said filtered keyframes before using said frame signatures to create said superhistograms to create a compact visual summary of said video material.

13. (Original) The system (100) as claimed in Claim 12 wherein said visual summary controller (130, 200) is capable of creating said compact visual summary of said video material by using said superhistograms to cluster said filtered keyframes, and by adding a representative keyframe from said clustered keyframes to said compact visual summary of said video material.

14. (Original) The system (100) as claimed in Claim 12 wherein said frame signature is a histogram.

15. (Original) The system (100) as claimed in Claim 13 wherein the distance measure for clustering is equal to a histogram difference calculated by one of: L1 distance

measure method, L2 distance measure method, histogram intersection method, Chi Square test method, and bin-wise histogram intersection method.

16. (Previously Cancelled)

17. (Original) The system (100) as claimed in Claim 16 wherein said visual summary controller (130, 200) is capable of selecting a family histogram to use to create said compact visual summary of said video material.

18. (Original) The system (100) as claimed in Claim 11 wherein said visual summary controller (130, 200) further comprises:

a visual summary retrieval module (180) capable of retrieving a compact visual summary stored in a memory unit (120) and causing said compact visual summary to be displayed in response to a user request.

19. (Original) The system (100) as claimed in Claim 13 wherein said visual summary controller (130, 200) is capable of using said compact visual summary to access at least one portion of said video material.

20. (Original) The system (100) as claimed in Claim 13 wherein said visual summary controller (130, 200) is capable of using said compact visual summary to create new video material.

21. (Previously Presented) For use in a system (100) capable of creating visual summaries of video material, a method for creating a compact visual summary of video material, said method comprising the steps of:

receiving in a visual summary controller (130, 200) keyframes of said video material;
extracting frame signatures from said keyframes;
using said frame signatures to create superhistograms from said keyframes; and
using said frame signatures and said superhistograms to select representative keyframe images for each superhistogram to create a compact visual summary of said video material ,
wherein said representative images include at least one of (1) the first image in each family histogram, (2) the most meaningful image in each superhistogram, (3) a randomly chosen image, and (4) an image that is closest to the cluster center.

22. (Original) The method as claimed in Claim 21 further comprising the steps of:

filtering said keyframes received in said visual summary controller (130, 200); and
extracting frame signatures from said filtered keyframes before using said frame signatures to create said superhistograms to create a compact visual summary of said video material.

23. (Original) The method as claimed in Claim 22 further comprising the steps of:

using said histograms to cluster said filtered keyframes; and
adding a representative keyframe from said clustered keyframes to said compact visual summary of said video material.

24. (Original) The method as claimed in Claim 23 wherein the distance measure for clustering is equal to a histogram difference calculated by one of: L1 distance measure method, L2 distance measure method, histogram intersection method, Chi Square test method, and bin-wise histogram intersection method.

25. (Previously Cancelled)

26. (Original) The method as claimed in Claim 23 further comprising the step of:
selecting a family histogram to use to create said compact visual summary of said video material.

27. (Original) The method as claimed in Claim 23 further comprising the steps of:
retrieving a compact visual summary stored in a memory unit (120); and
causing said compact visual summary to be displayed in response to a user request.

28. (Original) The method as claimed in Claim 23 further comprising the step of:

causing said visual summary controller (130, 200) to use said compact visual summary to access at least one portion of said video material.

29. (Original) The method as claimed in Claim 23 further comprising the step of:

causing said visual summary controller (130, 200) to use said compact visual summary to create new video material.

30. (Previously Presented) For use in a system (100) capable of creating visual summaries of video material, computer-executable instructions stored on a computer-readable storage medium (125) for creating a compact visual summary of video material, the computer-executable instructions comprising the steps of:

receiving in a visual summary controller (130, 200) keyframes of said video material;

extracting frame signatures from said keyframes;

using said frame signatures to create superhistograms from said keyframes; and

using said frame signatures and said superhistograms to select representative keyframe images for each superhistogram to create a compact visual summary of said video material,

wherein said representative images include at least one of (1) the first image in each family histogram, (2) the most meaningful image in each superhistogram, (3) a

randomly chosen image, and (4) an image that is closest to the cluster center.

31. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 30 further comprising the step of:

filtering said keyframes received in said visual summary controller (130, 200);

and

extracting frame signatures from said filtered keyframes before using said frame signatures to create said superhistograms to create a compact visual summary of said video material.

32. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 31 further comprising the steps of:

using said histograms to cluster said filtered keyframes; and

adding a representative keyframe from said clustered keyframes to said compact visual summary of said video material.

33. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 32 wherein the distance measure for clustering is equal to a histogram difference calculated by one of: L1 distance measure method, L2 distance measure method, histogram intersection method, Chi Square test method, and bin-wise histogram intersection method.

34. (Previously Cancelled)

35. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 34 further comprising the step of:
selecting a family histogram to use to create said compact visual summary of said video material.

36. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 30 further comprising the steps of:
retrieving a compact visual summary stored in a memory unit (120);
and causing said compact visual summary to be displayed in response to a user request.

37. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 32 further comprising the step of:
causing said visual summary controller (130, 200) to use said compact visual summary to access at least one portion of said video material.

38. (Original) The computer-executable instructions stored on a computer-readable storage medium (125) as claimed in Claim 32 further comprising the step of:
causing said visual summary controller (130, 200) to use said compact visual summary to create new video material.